

***Hobbseus cristatus* (Hobbs) 1955**

Crested riverlet crayfish



Photo by C. Lukhaup.

Distribution, Habitat, and Behavior

Hobbseus cristatus, endemic to Mississippi, is known from four sites in the Tombigbee River basin in Kemper, Lowndes, and Noxubee counties and one site in the Pascagoula River basin in Lauderdale County (Hobbs 1955; MS crayfish database, this website). However, Hobbs (1989) and Fitzpatrick and Payne (1968) seem to discount the presence of the species in the Pascagoula River basin. Fitzpatrick (2002) also included Leake, Winston, and possibly Chickasaw counties in the distribution of *H. cristatus*, but the location of voucher specimens from those counties is unknown. The Mississippi crayfish database (this website) includes only one collection of the species since 1957.

Most of the *H. cristatus* were collected from roadside ditches with shallow (<0.3 m), turbid water, and some were from “sluggish” portions of streams or simple burrows (about 0.3 – 0.5 m deep). All those collected from the water were in grass and or accumulations of detritus on clay substrate. The species is probably a secondary burrower (Hobbs 1955).

Life Colors and Distinctive Characters

The following descriptions are adapted from Hobbs (1955). The rostrum is nearly flat, ending in a small, upturned acumen, the areola is wide with room for 2 – 4 punctations across the narrowest part, and spines are lacking on the rostrum, the postorbital ridges, and the side of the carapace along the cervical groove. Antennal scales are rounded with the widest portion at about mid-length. The chelae have a row of tubercles along the inner portion of the broad palm. The form I male gonopod has a central projection directed at a roughly 65° angle to the main shaft and slender mesial process directed at a 90° angle and extending well beyond the central projection. Males have hooks on the third pair of pereopods (legs). As in all *Hobbseus*, the annulus ventralis of the female is moveable. The annulus ventralis is subovate with a broadly S-shaped sinus extending from the middle of the anterior margin to the middle of the posterior

margin. The annulus ventralis of females in the Lauderdale County collection differed slightly from those in other collections.

Size

The three type specimens ranged in carapace length from 14.2 – 16.8 mm.

Most Like

Hobbseus cristatus is similar to the other six *Hobbseus* species. In *H. cristatus*, the central projection and mesial process of the form I gonopod are bent at angles of 65° and 90°, respectively, relative to the main axis (Hobbs 1966). Form I male gonopod terminal elements in the other species differ as follows: in *H. orconectoides* they are much shorter and nearly straight, in *H. vallec ulus*, *H. yalobushensis*, and *H. prominens* they recurve at > 90°, in *H. petilus*, the mesial process curves upward distally, and in *H. attenuatus*, the angle of curvature is similar but a prominent knob is present near the base of the mesial process. Also, in *H. attenuatus* the mesial process is narrower, the central projection less sharp tipped, and the gonopods rest in a deep trough form by sternal projections (Black 1969).

The annulus ventralis of females differs as follows: in *H. attenuatus*, *H. orconectoides*, and *H. prominens* the sinus is straighter, in *H. vallec ulus* the sinus creates one sharp angle in the anterior third of the annulus ventralis but then extends posteriorly in a nearly straight line, in *H. yalobushensis* the annulus ventralis is more oval shaped, lacking corners along the posterior margin. The annulus ventralis of *H. cristatus* is most similar to that of *H. petilus*, but in the latter the sinus, although S shaped, does not quite reach the posterior margin. Also, in *H. cristatus*, the sternal plate posterior to the annulus ventralis is rectangular not subovoid as in *H. petilus*.

Life History

A form I male was collected in April, and juveniles were collected in January and April (MS crayfish database, this website). Nothing else is known about the species' life history.

Crayfish Associates

Hobbseus cristatus has been collected with *Procambarus acutissimus* and an undescribed *Procambarus* species (Hobbs 1955) and with *Orconectes chickasawae* (Cooper and Hobbs 1980).

Conservation Status

American Fisheries Society ranking: Threatened.

Heritage global ranking: G3 (vulnerable to extirpation or extinction).

State of Mississippi: Tier 1 (in need of immediate conservation action and/or research)(MDWFP 2005).

See (Taylor et al. 2007) for further explanation of the American Fisheries Society and Heritage rankings.

Species Description

Originally described as *Cambarus cristatus*.

Hobbs, H. H., Jr. 1955. A new crayfish of the genus *Cambarus* from Mississippi. Proceedings of the Biological Society of Washington 68:95-100.

Literature Cited

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- Taylor, C. A., G. A. Schuster, J. E. Cooper, R. J. DiStefano, A. G. Eversole, P. Hamr, H. H. Hobbs, III, H. W. Robison, C. E. Skelton, and R. F. Thoma. 2007. A reassessment of the conservation status of crayfishes of the United States and Canada after 10+ years of increased awareness. Fisheries 32:372-389.

Fact sheet author

Susan B. Adams

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